CAN/ULC-S531:2019

Standard for Smoke Alarms

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Standard for Smoke Alarms, CAN/ULC-S531

Fourth Edition, Dated May 17, 2019

Summary of Topics

This Fourth edition of CAN/ULC-S531 includes the following:

New Firmware Requirements

Combination of Requirements for Recreational Vehicles and Boats into One Section

New Mechanical Push Test

New Paintbrush Marking

Clarification for Manufacturer's Published Instructions

Supervised Battery as Primary/Sole Power Source For Alarm Accessories

Trouble Signal for Detached Low Frequency or Tactile Accessories

Sensitivity Test Clarifications

Modified requirements to address the use of conformal coatings in lieu of full spacings for circuits with a potential greater than 30 Vrms on high voltage printed wiring boards.

Elimination of outdated lamp interchangeability requirements.

The new and revised requirements are substantially in accordance with Proposal(s) on this subject dated June 15, 2018 and January 23, 2019.

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PREFACE

This is the Fourth Edition of the Standard for Smoke Alarms, CAN/ULC-S531.

This Edition of the Standard has been formally approved by the ULC Standards Committee on Fire Alarm and Life Safety Equipment and Systems.

This Standard has been developed in compliance with the requirements of Standards Council of Canada (SCC) for accreditation of a Standards Development Organization.

Only metric SI units of measurement are used in this Standard. If a value for measurement is followed by a value in other units in parentheses, the second value may be approximate. The first stated value is the requirement.

Annexes B, C, and E, identified as normative, form a mandatory part of this Standard.

Annexes A, D, and F, identified as informative, are for informational purposes only.

In Canada, there are two official languages, English and French. All safety warnings must be in French and English. Attention is drawn to the possibility that some Canadian authorities may require additional markings and/or installation instructions to be in both official languages.

This Fourth Edition National Standard of Canada was based on, and now supersedes, the Third Edition.

Attention is drawn to the possibility that some of the elements of this Canadian standard may be the subject of patent rights. ULC Standards shall not be held responsible for identifying any or all such patent rights.

Requests for interpretation of this Standard should be sent to ULC Standards. The requests should be worded in such a manner as to permit a “yes” or “no” answer based on the literal text of the requirement concerned.

This CAN/ULC-S531 Standard is under continuous maintenance, whereby each revision is approved in compliance with the requirements of SCC for accreditation of a Standards Development Organization. In the event that no revisions are issued for a period of four years from the date of publication, action to revise, reaffirm, or withdraw the standard shall be initiated.

Comments or proposals for revisions on any part of the Standard may be submitted at any time. Proposals should be submitted via a Proposal Request in the On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com/canada.

This Standard is intended to be used for conformity assessment.

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INTRODUCTION

1 Scope

1.1 These requirements cover electrically operated single and multiple station smoke alarms intended for open area protection in indoor locations and portable smoke alarms used as "travel" alarms in accordance with:

a) Installation of Smoke Alarms, CAN/ULC-S553;

b) National Building Code of Canada; and

c) National Fire Code of Canada.

1.2 A single station smoke alarm (e. g. ionization-type, photoelectric-type, smoke alarm with supplementary heat detection type, combination smoke type, multi-criteria type), as defined by these requirements, is a self-contained fire alarm device that consists of an assembly of electrical components including a smoke sensor/ chamber, alarm sounding appliance, and provision for connection to a power supply source, either by splice leads, terminals, a cord and plug arrangement or containing integral batteries to detect one or more products of combustion. The products of combustion may consist of visible as well as invisible smoke particles, gases, heat, radiant energy, and water vapor. Additional functionality such as, a supplemental heat detector, terminals for connection to a remote audible signaling appliance (device) or accessory, and an integral transmitter to energize a remote audible signaling appliance (device) is permitted to be incorporated as part of the smoke alarm assembly.

1.3 Smoke alarms not intended for interconnection are defined as single-station type.

1.4 Multiple station units are single station smoke alarms that are:

a) Interconnected so that actuation of one results in alarm sounding by all interconnected smoke alarms, or

b) Smoke alarms that are connected to remote heat detectors or heat alarms.

1.5 These requirements, where applicable, also cover all remote accessories that are to be connected.

1.6 This standard does not cover the following:

a) Smoke detectors of the non-self-contained type that are intended for connection to a household or industrial system control unit. These are included in CAN/ULC-S529, Smoke Detectors for Fire Alarm Systems.

b) Mechanically operated single and multiple station fire alarm devices that are specified in Single and Multiple Station Heat Alarms, ULC/ORD-C539;

c) Heat detectors – except for the requirements in the Fire Test – Smoke Alarm with Supplementary Heat Detection, Clause 69, incorporated as part of a single station smoke alarm assembly whose requirements are covered in ULC/ORD-C539, Single and Multiple Station Heat Alarms, and/or when part of a multi-criteria smoke alarm.

d) An accessory that is provided with a means to transmit alarm signals to a constantly attended, remote monitoring location. Any accessory capable of transmitting these types of signals is covered by the requirements in CAN/ULC-S545, Residential Fire Warning System Control Units;

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